National Aeronautics and Space Administration

Solicitation:
NNH18ZEA001N-ULI

Transformative
Aeronautics Concepts Program

University Leadership Initiative (ULI) Applicants Workshop

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Applicants Workshop Overview

- Purpose: Provide information on NASA Aeronautics University Leadership Initiative (ULI) solicitation and cover Q&A
- Agenda
  - ULI solicitation overview
  - Questions and Answers (Q&A)
- Materials available:
  - Solicitation and Q&A (ROA General and solicitation-specific) currently available: https://nspires.nasaprs.com/external/
    - From NSPIRES, Under Solicitations choose Open, then select NNH18ZEA001N-ULI link for D.4 University Leadership Initiative (ULI)
  - Slides, video recording, written Q&A will be available at ULI site: https://nari.arc.nasa.gov/uli
  - NRA *Guidebook for Proposers* available at https://www.hq.nasa.gov/office/procurement/nraguidebook/
- Notice
  - Material presented at this forum reflects best known information
  - This session, including all questions and answers will be recorded and posted
  - In case there are any differences between the solicitation and material presented at this forum, the solicitation will take precedence

NASA Aeronautics

Vision for aeronautical research aimed at the next 25 years and beyond

6 Strategic Thrusts

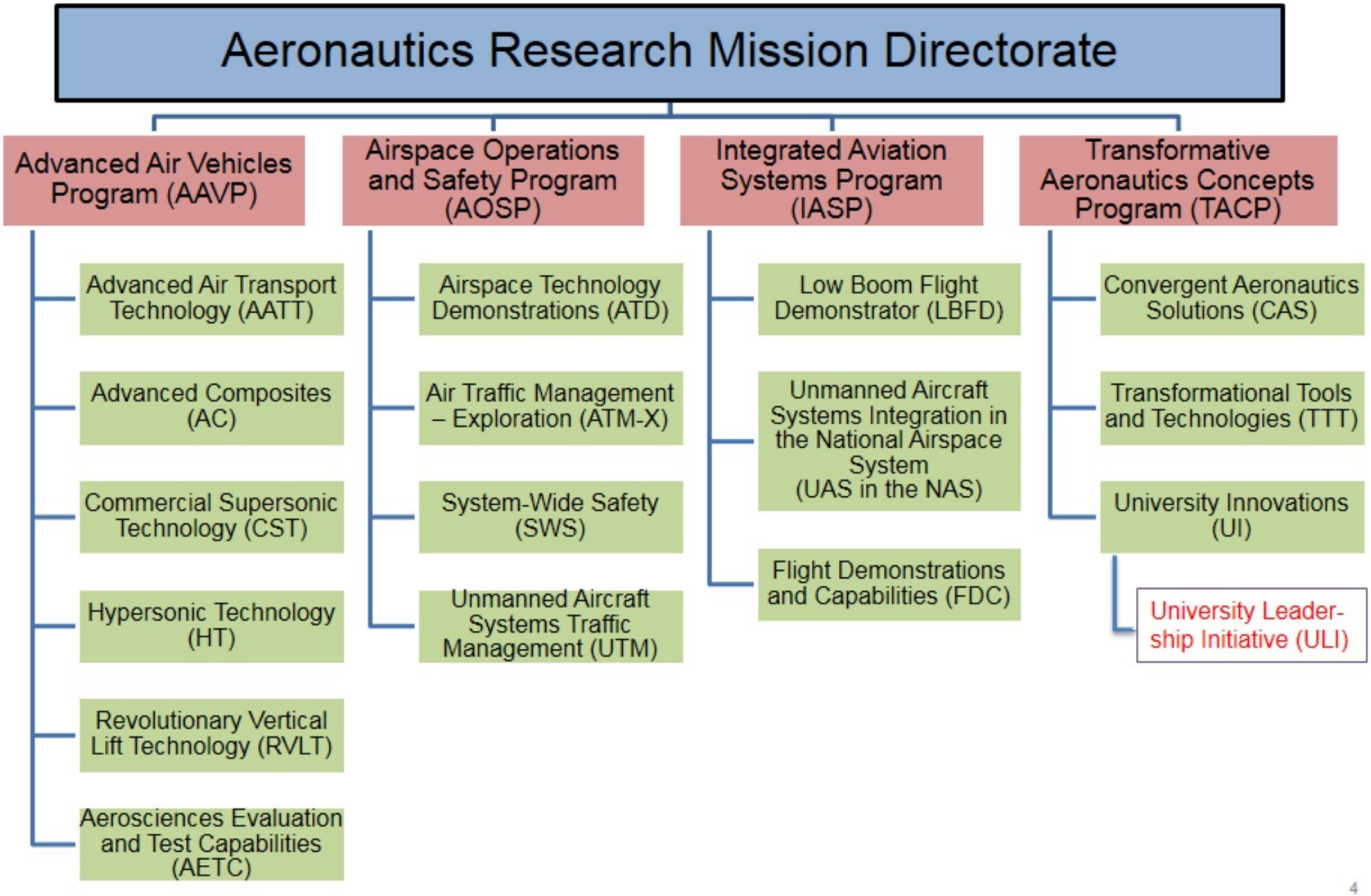
- Safe, Efficient Growth in Global Operations
- Transition to Alternative Propulsion and Energy
- Innovation in Commercial Supersonic Aircraft
- Real-Time System-Wide Safety Assurance
- Ultra-Efficient Commercial Vehicles
- Assured Autonomy for Aviation Transformation

Each thrust leads toward community-based outcomes in three time periods:

- Near-Term (2015-2025)
- Mid-Term (2025-2035)
- Far-Term (Beyond 2035)

NASA Aeronautics Strategic Implementation Plan
https://www.nasa.gov/aeroresearch/strategy

NASA Aeronautics Program/Project Structure



Strategic Goals for ULI Portfolio

- Assist in achieving aviation outcomes defined in the ARMD Strategic Implementation Plan through NASA-complementary research

- Transition research results to an appropriate range of stakeholders that leads to a continuation of the research. Transition can occur in a number of ways, including the following:
  - Creates a new product line in U.S. industry or a new ARMD project
  - Whole ULI concept is transitioned to U.S. industry/ARMD project
  - Part of the ULI concept is transitioned to U.S. industry/ARMD project
  - ULI findings impact direction of U.S. industry/ARMD

- Provide broad opportunities for students, graduate and undergraduate, to participate in aeronautics research

- Promote greater diversity in aeronautics through increased participation of minority-serving institutions and underrepresented university faculties in ULI activities

Proposals Solicited in 7 Topics

Topics described by the Six Thrusts in the Strategic Implementation Plan

1. Safe, Efficient Growth in Global Operations
2. Innovation in Commercial Supersonic Aircraft
3. Ultra-Efficient Commercial Vehicles
4. Transition to Alternative Propulsion and Energy
5. Real-Time System-Wide Safety Assurance
6. Assured Autonomy for Aviation Transformation
7. Aviation Manufacturing

Topic summarized in the ULI NRA

Desired Attributes of a ULI Team

Universities take the lead - set their own research path and build their own teams

- Address the most complex challenges associated with ULI topics
- Bring best and brightest minds across many disciplines
- Apply innovative teaming strategies to have high impact research outcomes
- Establish own non-advocate peer review mechanisms
- Principal investigators will actively explore transition opportunities and pursue follow-on funding from stakeholders and industrial partners during the course of the award

Technical Challenges and Research

- Identify the most critical technical challenges that must be solved to achieve the desired outcomes in the topic area
  - Technical challenges represent distinct barriers that must be overcome
  - Success and progress is measurable
  - Different from technical challenges developed by NASA-internal teams
    - Summaries of these Internal NASA technical challenges are provided in solicitation
    - Should be based on what proposer believes are important barriers to overcome (not compatibility with existing NASA technical challenges)
- Propose independent, innovative research activities to solve the technical challenges, including developing the success criteria, progress indicators, and technical approach
  - Bring forward system-level, revolutionary concepts
  - Incorporate multi-disciplinary integration, including those outside of traditional aeronautics disciplines (technology convergence)
  - Offer novel, high technical risk approaches that open avenues for accelerated progress
  - Research products could include technologies, operational concepts, methods, design tools, models, or other technical advancements
- Help achieve outcomes in Strategic Implementation Plan

ULI Teaming

- Lead organization for ULI proposal must be an accredited, degree-granting U.S. college or university
- Team members may include:
  - Other departments at the principal investigator's institution
  - Other U.S. colleges or universities
  - U.S. industry members
  - Non-profit organizations in the U.S.
  - Federally-Funded Research and Development Centers (FFRDCs)
  - Other U.S.-based entities
- Historically Black Colleges and Universities (HBCU) and other minority-serving institutions strongly encouraged to apply
- No foreign collaboration
- No NASA Team Members

More on ULI Teaming and Peer Review

- Universities are asked to build a talented, diverse, and cross-disciplinary team to explore innovative, integrated solutions toward the technical challenges
  - Develop teams that bring together best and brightest minds from many disciplines and perspectives
  - Encouraged to include team members that are less-established or have less prior experience working on NASA Aeronautics projects. Effective integration and mentoring of these team members represents an important part of leadership role.
  - Promote next generation of engineers - undergraduates and graduates with the skills to lead U.S. aviation into the future
- Ensure meaningful roles and effective integration across all contributors
- Establish a strong, non-advocate, peer review process for assessing relevance, technical quality, and performance

Projected Distribution of Awards

TAC Program anticipates investing in three awards, with at least two having a duration of three-years or less

- Proposals are invited for 2-4 year range
- Nominal budgets in the $1-2M range per award per year
- To promote ULI portfolio balance, NASA anticipates (at time of release of NRA):
  - One award in Topic 6 (Assured Autonomy for Aviation Transformation)
  - One award in Topic 7 (Aviation Manufacturing)
  - One award in any of the seven topics (1-7)
- No guarantee that the awards will be allocated as described. Depends on the quality of the proposals received, the scope of the proposed work, funding availability, and program needs.
- Selecting Official has the option to consider program portfolio priorities, cost sharing and budget constraints when making the final selection.

Proposal Process

- Step-A proposal due May 16, 2018
  - Focusing on objectives, partially-defined technical challenges, overall approach, teaming and education strategy (see NRA for full details)
  - 5 pages for Scientific/Technical/Management section
- NASA will review and make selections of which Step-A proposals will be invited to submit a Step-B proposal
  - All proposers will be notified
- NASA may hold an optional, virtual Industry Networking Opportunity (July timeframe)
  - Facilitate contacts between Step-B proposal teams and U.S. aviation industry for the purposes of exploring potential partnerships
  - Industry may offer insight into connections between the proposed concepts and the needs of the aviation community
  - Information exchange for technology transition
- Step-B proposal due 60 days from notification (August timeframe)
  - Full proposal with completed technical challenges, research activities, and detailed approach (see NRA for full details)
  - 25 pages for Scientific/Technical/Management section

Proposal Evaluation Criteria

- Step-A Proposal
  - Relevance to ARMD objectives (weight 40%)
  - Technical Merit (weight 40%)
  - Innovative Teaming and Education (weight 20%)

- Step-B Proposal
  - Relevance to ARMD objectives (weight 25%)
  - Technical Merit (weight 25%)
  - Innovative Teaming and Education (20%)
  - Effectiveness of the Proposed Work Plan (weight 15%)
  - Cost (weight 15%)

Some Notes for Step-B Proposals

- Industry Networking Opportunity (Optional for Proposers)
  - The decision to participate or to incorporate ideas obtained from the industry networking opportunity into the Step-B proposal is entirely at the proposer's discretion
  - NASA will evaluate Step-B proposals based on their own merit
  - No consideration as to whether Step-B proposal was adjusted because of the industry networking opportunity
- Proposed Budget
  - Emphasis on accurate cost estimates, based on what's needed
- Cost Sharing
  - Proposers may include cost sharing in their proposals at their own discretion
  - Cost sharing is not an evaluation criteria
  - If cost sharing allows teams to increase the technical merit and impact of their work, then will affect those evaluation criteria and the Value-Cost scoring metric
  - Cost sharing may also be considered by the Selecting Official in the final selection of awards

NASA Role in ULI

- Enable and provide support rather than technical oversight
- Support ULI team in following areas:
  - Provide additional insight on market trends and offer suggestions to support continued alignment with stakeholder needs
  - Work with PI to explore opportunities for technology transition to other ARMD programs and external community
  - Facilitate contacts with NASA subject matter experts and facility owners
- Provide oversight that relies primarily on input from team's peer review process
- Hold annual ULI technical interchange

Tips

- Today's slides and recording will be available at ULI site: https://nari.arc.nasa.gov/uli
- Read the ULI NRA (https://bit.ly/2uw6DCJ) carefully
- Read the ARMD Strategic Implementation Plan
- Questions not answered in ULI NRA may be answered in the ROA-2018
- Web site for submission of proposal via NSPIRES: https://nspires.nasaprs.com/external
- Proposal preparation and submission instructions:
  - General instructions are in the *Guidebook for Proposers* available at https://www.hq.nasa.gov/office/procurement/nraguidebook/
  - ULI-specific instructions are in the ULI NRA
- Ask questions and check the ULI Q&A document
  - Email questions to: HQ-UnivPartnerships@mail.nasa.gov
  - Link for Q&A document at website: https://bit.ly/2GXgHHF
  - Q&A document will be updated as questions are answered. Check regularly

Questions and Answers

1. **Can the same institution be the lead institution for separate proposals responding to different ULI topics?**
   - Yes

2. **Are researchers allowed to be members of multiple teams with different lead institutions?**
   - Yes. The researchers must be identified as team members in each proposal they participate in.

3. **Does NASA ULI program allow a FFRDC to participate as a team member?**
   - Yes, ROA-2018 allows Federally-Funded Research and Development Centers (FFRDC) to participate as team members.

4. **Can a non-US citizen, studying/working at a university, be included on the team?**
   - Generally yes, the eligibility requirements of the NRA apply to the proposing organization and not the individual. However, it is possible that export control requirements must be taken into account for members of a proposing organization who are not U.S. citizens or do not have permanent resident status.

Questions and Answers

5. **If a principal researcher on a team changes institutions between the Step A and Step B proposal stages, are they allowed to remain as part of the team, or is it rigidly connected to the affiliated university?**
   - Yes, a person who changes institutions between the Step A and Step B proposal stages may remain as part of the team. Any change in role must be updated in the proposal. Please list the institution that is current at the time the proposal is submitted.

6. **Can a foreign company be used as vendor? We have a special product that only the foreign company can make. If they have an office in US but its headquarters is in Europe, is that company still considered a foreign entity?**
   - This is not an easy question to address. It depends on the circumstances. The questioner should consult with an attorney regarding export control and other applicable statutes and regulations.

Questions and Answers

7. **We are building a team for the NASA ULI program and have a company that is interested in joining. However, they are concerned that the cooperative agreement will not allow profit. Can a team member receive a subcontract from the leading institution with profit?**
   - As noted in the solicitation, NASA anticipates using cooperative agreements as the funding vehicle. Cooperative agreements do not restrict lead organizations from including a subcontractor on a for-profit basis. This is at the discretion of the lead organization.

Additional Questions?

Taken in the following order

- Questions from the Adobe Connect chat window
- Questions over the telecom line

Thanks for participating!

Quickest way to resolve questions about this NRA is to e-mail questions to: <HQ-UnivPartnerships@mail.nasa.gov>

NASA points of contact (POC)

- Procurement POC: Ken Albright <kenneth.e.albright@nasa.gov>, (228) 813-6127
- Technical POC: Koushik Datta <koushik.datta@nasa.gov>, (650) 604-2195
- NSPIRES help desk: <nspires-help@nasaprs.com>, (202) 479-9376